AGRICULTURAL EDUCATION IN ILLINOIS TO 1870: THE PRESS

BY

RICHARD BARDOLPH

A.B., University of Illinois, 1940
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AN ABSTRACT OF A THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF DOCTOR OF PHILOSOPHY IN
HISTORY IN THE GRADUATE SCHOOL OF
THE UNIVERSITY OF ILLINOIS, 1944

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AGRICULTURAL EDUCATION IN ILLINOIS TO 1870: THE PRESS

The printed page has proved to be a most efficient and adaptable instrument in the hands of agricultural reformers; yet none of the principal means for the dissemination of agricultural intelligence has been obliged to struggle more desperately for public recognition and confidence.

In Illinois, as elsewhere, illiteracy opposed a formidable obstacle to this means of improvement. In the frontier days, before 1840, a considerable fraction of the state's population was unable to read and write; and because Illinois was so wretchedly supplied with schools in the first two decades of statehood, great numbers of farmers who had grown up in that period were still illiterate in the 'fifties and 'sixties. An even more effective bar to improvement in farming practice through agricultural literature was the almost pathological aversion to "book farming" that characterized the rural class throughout the nation. Agricultural journals fought against this prejudice, and, with other leaders in the movement for better husbandry, they urged farmers to apply themselves diligently to the literature designed to instruct them in their business.

The principal types of such matter within reach of the general farmer were books on agriculture and related subjects; the newspapers; pamphlets, catalogs, and handbills, designed primarily for advertising; the transactions of agricultural societies; government reports; and the farm journals. Each of these is considered in turn.

The sale of books on husbandry was actively promoted by the farm periodicals. Editors made a practice of printing reviews of every useful book that came to their attention, and served as agents of publishers who had agricultural works to sell. They frequently kept in their offices and advertised for sale most of the important agricultural and horticultural volumes of both foreign and American authorship that were available in the country. The service was usually performed almost entirely without profit and on liberal terms. The agricultural societies also forwarded the cause of bringing books to the attention of farmers at their yearly fairs; the annual address very often contained an exhortation to buy books, and sometimes the associations offered useful works as premiums at their exhibitions.

The early American books on agriculture showed clearly their

English ancestry, though efforts were made to provide material adapted to the peculiar conditions of the United States. By 1800 an impressive body of literature had grown up in England. The development began with Walter of Henley's *Treatise on Hosebandry* in the thirteenth century, John Fitzherbert's *Boke of Husbandrye* in 1523, Thomas Tusser's *A Hundreth Good Pointes of Husbandrie* and *Five Hundred Pointes of Husbandry* (1577), and Sir Hugh Plat's *Jewel House of Art and Nature* (1594-1604). The seventeenth century boasted a long train of distinguished writers, and by 1700 the books that had been produced embodied, with varying degrees of clarity, the outlines of the innovations that finally revolutionized English agriculture. They had drawn attention to the principles of rotation and to the use of root crops, clover, and grasses, both for stock feed and for increasing grain yields. Planting in rows, the field cultivation of potatoes and turnips, the use of oil cake for cattle, the drainage of fens, the use of ensilage, the improvement of implements, and the importance of learning by scientific observation the fundamentals of plant and animal life had been preached with great cogency.

In the eighteenth century came rapid progress, stimulated by the epoch-making work of Jethro Tull, Charles Townshend, Robert Bakewell, Arthur Young, Thomas W. Coke, Charles and Robert Colling, and others. Not only did the published works of such reformers exert their influence in America, but direct correspondence of men like Young and John Sinclair in England with American gentlemen farmers like George Washington and Thomas Jefferson was also important. Before 1800 the writings of agricultural improvers had been concerned chiefly with common sense principles of farming practice, but very early in the nineteenth century a significant emphasis upon a scientific approach to agricultural problems began to appear.

Humphry Davy's *Elements of Agricultural Chemistry* (1813), based upon a series of lectures delivered before the Board of Agriculture, went through many editions and was widely known in America. Davy's teachings, provocative though soon outmoded, prepared a highway in the desert for later workers in agricultural chemistry like the French Antoine Chaptal and Jean Baptiste Boussingault, the German Justus von Liebig and Friederich Wöhler, and the two great English scientists of Rothamsted Station, John Bennet Lawes and J. H. Gilbert. As Davy pointed the way to an agricultural science, so Liebig was the real founder

of modern agricultural chemistry. His theories about plant nitrogen were later disproved, and he failed to reckon sufficiently with the importance of natural fertilizers and with the physical properties of the soil, but his contribution was revolutionary and his work quickly won the attention of agricultural reformers the world over. His great book, *Organic Chemistry in its Relation to Agriculture and Physiology* (1840), and its successive revisions went through many editions and within a few years had been translated into the languages of all the leading countries of the world.

The period after 1800 saw an increasing number of books on agriculture in England and the Continent. Retaining the best of the older works, the new volumes, particularly after the publication of Davy's *Elements*, groped toward a scientific analysis and synthesis of agricultural principles, and application in terms of manuring, rotation, deep tillage, drainage, new modes of cattle feeding, and other improvements. General treatises on farming gradually gave way to specialized works on subjects like fruit growing, the care and feeding of cattle, gardening, the culture of flax, poultry keeping, rural architecture, tile drainage, the construction of farm implements, vine dressing, manuring, root culture, agricultural chemistry and soil analysis, and silk culture. Many of the volumes were thoroughly familiar to farmers in the United States, and a number of them were issued in special American editions.

By 1815 about forty agricultural works had been published in America, and their number increased rapidly especially after 1840. Pioneers in the field of distinctively American works, though decidedly English in flavor, were Jared Eliot's *Essays upon Field Husbandry in New England* (1760), Samuel Deane's *New England Farmer or Georgical Dictionary* (1790), John Beale Bordley's *Essays and Notes on Husbandry and Rural Affairs* (1799), John A. Binns's *A Treatise on Practical Farming* (1803), and John Taylor's *Arator* (1812).

The number of American works steadily increased during the period before 1870, both in number and in quality. In the earlier years the chief reliance of bookmen was upon reprints of older English and French productions, and upon semiscientific treatises that smelled more of the lamp than of the earth. After 1820 the best of the foreign contributions and the growing number of domestically written books took an increasing interest in

scientific principles, to that time only dimly understood. After 1840 soil restoration, plant nutrition, and especially soil chemistry and analysis bulked large in the literature, as scientists in Germany, England, France, and the United States probed deeper into the natural sciences.

In the American works, as in the English, a growing specialization manifested itself. Special works on single phases of agriculture, touching nearly every aspect of farming practice and theory, came from the presses with gathering speed, so that in 1868 the United States Commissioner of Agriculture could publish a list of more than five hundred books on husbandry issued in the United States before that year.

Prominent among the early nineteenth century writers were New Englanders such as Jesse Buel (1778-1839) and Thomas Green Fessenden (1771-1837), and the picturesque Southerner, Edmund Ruffin (1784-1865), whose celebrated *Essay on Calcareous Manures* (1832) exerted an enormous influence. In Massachuseets Henry Colman (1785-1849), Commissioner for an Agricultural Survey, produced a notable series of volumes, and far to the West Solon Robinson (1803-1880), the Indiana major prophet of agricultural advance, won an important number of readers both for his contributions to farm journals and for his books.

In the South the practical farmer, Thomas Affleck (1812-1868), produced some creditable writings, while in the remote academic atmosphere of Yale University the brilliant young chemist, John Pitkin Norton (1822-1852), prepared his *Elements of Scientific Agriculture* and won before his lamentably early death the reputation of an immortal in the history of scientific farming. The works on manures written by Samuel L. Dana (1795-1868) and Daniel Jay Browne (1804-1863?), Caleb Bement's (1790-1868) writings on poultry raising, Henry S. Randall's (1811-1876) volumes on sheep husbandry, and Lewis F. Allen's (1800-1890) and Richard L. Allen's (1803-1869) books on general agriculture, cattle, and rural architecture were outstanding in their departments. The development of American veterinary literature was slow, but by the mid-century foreign treatises were giving place to reputable works by Samuel W. Cole and George H. Dadd (d. 1868). The best of the works on agriculture were J. B. Miner's *American Bee-Keepers' Manual* and the works of the great Lorenzo L. Langstroth (1810-1895).

John Johnston (1791-1880), father of tile draining in America, wrote no books, but his frequent contributions to the agricultural periodicals led editors to declare that few had made their success so widely beneficial to the farming class as he had done. The foremost works on drainage during the period were those of Henry Flagg French (1813-1865) and John H. Klippart (1823-1878), and among special works on agricultural machinery perhaps the best was John J. Thomas' *Farm Implements and the Principles of their Construction and Use* (1854?).

The one branch of husbandry most liberally supplied with theoretical and practical books was horticulture. Beginning about 1800, a number of works of American specialists in this subject steadily came off the press, many of them going through several editions. By 1870 there were many volumes on vegetable raising, general works on fruit culture, thorough-going treatises on pomology, special works on the apple, the pear, small fruits, the strawberry, the peach, grape and vine culture, kitchen gardening, and floriculture. Many of the books were specially adapted to particular states and sections, and offered advice as to the varieties best suited to given areas, information on seed selection, grafting, pruning, storage, plant diseases, insect pests, and a great number of other matters of consequence to horticulturists. Some of the most distinguished men in the annals of American agriculture contributed to this literature.

In the development toward a horticultural science, the period to 1880 has been denominated the Amateur Era. Writers and improvers were chiefly concerned with nomenclature and synonomy, and it was not until the last two decades of the century that variety testing and field experiments were conducted on a significant scale. Little in the nature of truly scientific advance was achieved before 1880, but the writings of the amateurs had performed the indispensable preliminary function of standardizing taxonomy and practice, and popularizing the accumulated horticultural knowledge of Europe and America. The most celebrated of the numerous and distinguished company of American writers were Andrew Jackson Downing (1815-1852) and Marshall Pinckney Wilder (1798-1886). The former was an astonishing genius whose death by drowning at the age of thirty-seven was lamented by a nation as the passing of few public figures has been; and the latter, though he wrote no full-length

books, was a dominating figure in the horticultural world until the day of his death at a great age.

In addition to volumes for practical farmers, a textbook literature began to develop, and by 1870 some fourteen books on agriculture, designed for schoolroom use, had been published in the United States. Other works of some value to Illinois rural folk were almanacs and yearbooks especially intended for farmers.

But while the quantity of agricultural literature increased, efforts to induce Illinois farmers to avail themselves of the benefits of systematic reading bore little fruit before 1870; agricultural journals and speakers at fairs complained that only a relatively small number of husbandmen purchased the books, and that, unhappily, those farmers most in need of instruction were least disposed to seek it.

Leaders in agricultural improvement saw some hope in the establishment by agricultural societies of rural libraries, but the development in this direction was disappointing. A few local farmers' clubs, a number of county societies, and the Illinois State Agricultural Society made efforts to build up libraries, but nearly every attempt was a dismal story of brave beginnings and quick decline, of chilling indifference and want of funds. The boldest organized attempt to make agricultural books generally available to the farming community was an effort in the middle 'fifties to establish throughout the state, under legislative patronage, school district libraries heavily weighted with such works. The book lists were selected by educational and agricultural leaders, funds were raised by local taxation, and in 1858 the State Superintendent of Public Instruction announced that a thousand libraries had already been introduced into the school districts of Illinois.

But, like so many other efforts to draw the attention of the rural class to scientific principles of agriculture, the project, embarked under such hopeful auspices, soon ran aground upon the shoals of apathy. There is no evidence that farmers made any extensive use of the libraries placed at their disposal; and it soon proved that the hope that rural school children would con these books as diligently as their spellers had been to optimistic. Less than ten years after the system had been inaugurater it was pronounced a total failure.

The Illinois newspaper press was in a small degree a medium of agricultural instruction. The state's first paper was estab-

lished in 1814, and by 1840 forty-eight weeklies and three dailies were serving a population of 476,000, the geographical distribution of the papers roughly coinciding with that of population. In 1860 there were 286 papers, including twenty-six dailies, and ten years later the total had risen to 505, with thirty-nine dailies and 364 weeklies

Throughout the entire period the newspapers were greatly preoccupied with politics, and the monotony was not greatly relieved by a few items of "Foreign Intelligence." "The Latest from Spain" or "Still Later from England" crowded out anything, early or late, from Illinois. General news of the nation at large was scanty, when, indeed, not limited to an occasional "Melancholy Event," or "Horrible Tragedy." Brief essays and poems of a religious or moral nature were employed to fill in space.

After the 'thirties the political emphasis continued, but it expressed itself less in dispassionate information and more in partisan discussion, ranging all the way from subtle editing of the news to violent invective. A growing quantity of domestic and local news began finding its way into the columns, and, particularly in the 'fifties, the weeklies devoted a considerable amount of space to sentimental poems and stories in which saints fell victim to the villainies of sinners and found in virtue its own reward.

Nevertheless, the newspapers contributed to agricultural improvement in a number of ways. Market reports and statistics concerning prices, receipts, and shipments of produce and provisions furnished the farmer with useful data. Even the advertisements, which sometimes took up as much as three-fourths of a paper's column space, were of some value to the agriculturist. Notices of stray horses, and advertisements offering blooded stallions, bulls, rams, and boars for breeding purposes performed a distinct service, and columns purchased by nurserymen, seedsmen, and dealers in livestock were often genuinely informative. As early as the 1830's implement advertisements began occupying several columns with cuts, diagrams, and detailed descriptions of the machines' construction and capacities.

Announcements of the time and place of agricultural fairs and meetings of farmers' societies were valuable, as were also newspaper accounts of societies' proceedings and descriptions of county and state fairs. Premium lists were published early in the season, and many editors, though their columns showed scant

interest in the improvement of agriculture, inserted an occasional editorial thumping the tub for a local society or fair. In a number of instances newspapers served as prime movers in campaigns to organize agricultural societies in communities where none existed, and, like the farm periodicals, many lent their support to the movement for agricultural schools.

Some editors took it upon themselves to offer economic advice. Farmers were urged to diversify their farming operations and were criticized for concentrating on a single grain crop, for attempting to manage and cultivate too much land, and for their failure to attend properly to the selection and preparation of seed. Some journals pressed upon their readers the wisdom of going into the dairying and poultry pursuits, and others advocated the raising of hemp, flax, cotton, or tobacco. When agricultural prices were depressed, papers now and then counseled farmers to hold their produce off the market until accumulated demands had forced a rise. Also of value were items calling rural communities' attention to outbreaks of cattle and hog diseases, columns of reviews of agricultural books, and pieces designed to instil a sense of pride in the farmer's lot in society and an appreciation of the dignity of his calling.

More important, however, were the items, ranging from single paragraphs to articles several columns in length, that offered direct agricultural instruction. The range of subjects covered was the same as that offered in the agricultural periodicals, and, indeed, most of it came from that source. Newspapers borrowed heavily from their "exchanges," and the farm journals furnished a convenient source of useful materials that could not fail to please a few readers here and there. Some use was made of transactions of state and county societies, and a small quantity of the agricultural content of the papers was original matter offered by farmers, other subscribers interested in agricultural improvement, and even by the editors themselves. Sometimes, though rarely, a special agricultural editor or correspondent was attached to the staff.

Just how great a volume of agricultural instruction reached farmers through the newspaper columns over a period of years it is impossible to say. It is perhaps safe to conclude that three-quarters or more of the journals contained no information of the kind deliberately calculated to instruct the farmer in his work. Far too often, after liberal provision had been made for adver-

tising, political fustian, literary claptrap, and inane gossip, no space at all was left for agriculture. But even if, from a quantitative standpoint, the ratio of agricultural items to the "literary" and humor columns, and to the pages filled with the pomposities of politicians was small, it remains true that the newspaper press furnished a thin trickle of soundly educational matter for farmers throughout the entire period—a stream that must certainly have contributed to the health of the state's agriculture.

Another significant, if not wholly distinterested, medium of education was the catalogs, circulars, pamphlets, broadsides, and posters distributed by manufacturers and merchants of farm machinery. If they did nothing more, they kept the farmers informed of the technical progress in the farm implement world. Wary farmers realized that many of the inflated claims had to be taken at a heavy discount, but even after such allowance was made, a substantial residue of information having educational value remained.

In 1867, for example, the Illinois agent of an Eastern implement firm distributed a sixty-four page catalog containing a considerable quantity of descriptive material, including nearly twenty illustrations, some of which pictured working parts in detail. The mechanical principles of the implements were fully described, and special attention was drawn to safety devices designed to reduce accidents on the farm. Similarly, Cyrus McCormick sent enormous quantities of pamphlets to his agents—sometimes in lots of five hundred to an individual dealer—who, in turn, were instructed to supply every farmer in their districts with the booklets. In sections where Germans were numerous, McCormick was careful to keep his dealers supplied with leaflets in their language.

Circulars and pamphlets ran into scores of pages, and even the posters in seed store and market place carried thousands of words in fine print, enumerating in minute detail the special features of each implement and indicating the respects in which it differed from its competitors. Candid abuse was heaped upon rivals, and charges of patent infringements were hurled back and forth in angry debate. John H. Manny, for example, would single out the McCormick product for special mention, comparing the machine feature by feature with his own—always, of course, to the disadvantage of his opponent—and concluding by threatening accountable for all infringments of patent rights. Of greater in-

terest to the farmer were the less contentious paragraphs and illustrations. Directions for the use of the equipment were painstakingly set forth, but promises of performance paid scant heed to the restraints of modesty.

Seed catalogs—and especially the catalogs and circulars of such enterprising and progressive Illinois fruit growers as John A. and Charles Kennicott, F. K. Phoenix, Lewis Ellsworth, and M. L. Dunlap—helped to keep the rural population abreast of developments and techniques that might otherwise have come more slowly to their attention. Nurserymen's catalogs often contained, besides the mere price lists, careful classifications of apples, pears, plums, peaches, and other fruits, data as to their ripening seasons, synopses of opinions on the several varieties by prominent pomologists, and instructions for planting, transplanting, pruning, and grafting.

Some printed material of value reached Illinois farmers through the agency of agricultural societies and clubs, but at no time did it approach in usefulness the contributions made through the general newspapers, farm periodicals, and agricultural books. In Illinois the history of agricultural societies begins with the establishment in 1819 of a state society centering about Kaskaskia, Vandalia, and Edwardsville, and of the Madison and Bond county societies in 1821. After a few annual meetings in the winter and yearly fairs in the fall, these societies soon perished, and it was some years before new organizations were launched. A dead lull in the early and middle 'thirties was followed by a brief flurry late in the decade, which saw the formation of perhaps half a dozen societies in the central part of the state.

The years 1838-1840 ushered in a period of rapid multiplication, and the farm journals remarked upon the establishment of a large number of county societies in the early and middle 'forties. In 1838 a second state society was organized at Springfield, but it was little more than a debating club for politicians, and it died in 1843. No transactions were printed by these societies, but their more virile contemporary, the Union Agricultural Society, chartered in 1839 and organized in the next year in five northern counties of the state, reached a considerable number of farmers through their official organ, the *Union Agriculturist and Western Prairie Farmer.* This monthly, established in 1841 under the editorship of the society's young secretary,

John S. Wright, was later to become one of the most distinguished agricultural papers of the nation.

In the middle of the decade the society, partly because of financial difficulties, gradually became enfeebled and was compelled to omit its annual fair in 1845 and again in 1846. Stricken by the paralysis that was creeping over the agricultural societies of the state, it died a lingering death. The county societies that had burgeoned so vigorously earlier in the decade also began to wither and fall away, and by 1848 the *Prairie Farmer* announced that "the greater number of these have completely died or fallen asleep," chiefly because of the farmers' want of leisure and their complete absorption in the task of making their farms pay in the face of "sickly autumns, want of market, loss of wheat crop, and other disabilities."

By 1851 the same journal noted a decided upswing. County societies sprang up rapidly, and in 1853 the Illinois State Agricultural Society was established at Springfield by a number of the state's most distinguished farm leaders. The General Assembly responded by appropriating $1,000 a year for the state society (raised to $3,000 in 1857), and in 1855 awarded $50 a year to every county society (increased to $100 two years later). Before 1858 the number of agricultural societies in the state had risen to more than ninety, a number surpassed only by New York. The Illinois State Agricultural Society existed until 1871, when it was superseded by a State Department of Agriculture; and throughout the 'fifties and 'sixties societies were maintained in nearly every county of the state. The latter were for the most part little more than fair-holding associations, though some of them sponsored occasional implement trials, built up small libraries, and had discussion meetings. They did not publish transactions but sometimes furnished useful papers and reports to the newspapers, the agricultural journals, and the transactions of the state society.

The state society's activities were also, unhappily, largely centered about the annual fairs, though premiums were also offered for essays, reports of experiments, and progressive modes of culture, and additional contributions were made in sponsoring trials of farm machinery, in exerting pressure upon the General Assembly for agricultural legislation, and in investigating cattle diseases. The benefits of these and other activities were further

distributed by means of the society's biennial volume of transactions.

The *Transactions*, published from 1855 to 1871, were filled at least in part with solid educational matter, but the usefulness of the books was somewhat reduced by the limited extent of their circulation. Earlier volumes were published in editions of only three thousand, and the number never exceeded ten thousand. Moreover, by legislative enactment, a large proportion of the volumes were distributed to legislators and county officials and never fell into the hands of practical farmers, while the latter, genuinely anxious to secure them, complained that they were unable to "coax, scold, beg, buy, or steal" a volume.

The books averaged about seven hundred pages in length. A goodly portion of them was burdened with useless lumber; two or three hundred pages of each issue were devoted to the profitless listing of the premium winners at the state fairs, and the printing of the minutes of the society's executive committee. But the balance of the volume was filled with useful reports, essays, and treatises on a wide variety of agricultural subjects, prepared by the most successful farmers of the state. Of particular value were reports of commissioners appointed to investigate epidemics of cattle disease in the state. and accounts of implement trials.

The reports of the Committee on Farms and Nurseries presented in some detail the observations and criticisms of a committee sent out by the society to investigate the farms and orchards of husbandmen who sought the premiums for the best conducted fields and fruit farms. Though few farms were entered in the competition, the committee traveled many hundreds of miles up and down the state to visit them, examining as many farms, whether competing ones or not, as their time and resources would permit. The reports were often filled with solid information and pointed suggestions that could be read with profit by most Illinois farmers.

The inclusion in the *Transactions* of papers, proceedings, and addresses of kindred societies like the Illinois State Natural History Society, the Illinois State Horticultural Society, the several county agricultural societies, and similar associations, added further worth to the books, and their value was increased after the middle 'sixties by the printing of extensive collections of commercial, agricultural, and industrial statistics.

Perhaps more instructive than the published transactions of general agricultural associations, but serving a much smaller clientele, were the printed proceedings of horticultural societies. The Illinois societies did not begin to take root until the late 'forties, and another decade passed before they blossomed and showed promise of bearing fruit. Local societies that increased in numbers after 1850 confined their activities mainly to annual, semiannual, and in some cases monthly exhibits, but they published no proceedings, and their influence was small.

Far more important were state and regional associations of fruit growers, whose characteristic function was the annual convention, where outstanding horticulturists met to discuss their problems more formally, systematize horticultural nomenclature and practice, report in detail upon their experience with varieties, and draw up fruit lists for the guidance of farmers all over the state. The published proceedings of these meetings of practical nurserymen helped to dispel the widespread notion that fruit trees would not grow on the Illinois prairies, and provided farmers with dependable guides to horticultural practice. The state was, fortunately, well supplied with a small but active and far-sighted group of fruit growers and nurserymen who were keenly alive to the high responsibility of leadership. This was exercised in the giving of direction to the horticultural interest in a comparatively treeless state, where extremes of heat and cold, drouth and moisture, emphasized the need for great caution and thoughtful experiment in the selection of varieties and the management of orchards, vineyards, and gardens.

The driving force that animated the state and district horticultural associations came from a compact fraternity of zealots like the Kennicotts, Jonathan B. Turner, M. L. Dunlap, E. S. Hull, F. K. Phoenix, C. R. Overman, Willard C. Flagg, O. B. Galusha, Arthur Bryant, Tyler McWhorter, and a score or more of others. The most important organizations through which they exerted their influence were the Northwestern Fruit Growers' Association, established in 1851, the Illinois State Horticultural Society (1856), the Alton Horticultural Society (1853), the Southern Illinois Fruit Growers' Association (1864), the Northern Illinois Horticultural Society (1868), and the Central Illinois Horticultural Society (1869). All of these published highly useful volumes, but, like the state agricultural society's *Transactions,* they

were printed in limited editions (fifteen hundred or fewer copies) and enjoyed only a limited circulation.

It was mainly through the exertions of the Illinois State Horticultural Society that a State Entomologist was appointed in 1866, and the first of a notable series of reports were prepared by Benjamin Dann Walsh (1867) and William Le Baron (1870-1874). In each report the emphasis was practical throughout. Accounts of individual insects were written in familiar style, were accompanied by illustrations, presented the life histories and habits of the subject, and concluded with recommendations for eradication and control.

The most useful of the printed materials made available to farmers during the period were the agricultural periodicals. Eighteen genuine farm journals were established in Illinois in the years before 1870, but of these fully a half lived for only one year or less, and only four survived for more than two years. The *Illinois Farmer* (Springfield, 1856-1864) lasted for nearly a decade, and the *Prairie Farmer* (Chicago, 1841-) has survived for more than a century. The development began with the *Western Ploughboy*, which was founded at Edwardsville in 1831 and perished after a single year.

The *Prairie Farmer*, after a few trial numbers late in 1840, was established in the next year as the *Union Agriculturist and Western Prairie Farmer*, but two years later its ownership and control passed from the Union Agricultural Society to John Stephen Wright, who renamed the paper the *Prairie Farmer*. Beginning as a monthly, it became a weekly in the middle fifties. Second only to that journal, but by no means comparable to it in influence, was the monthly *Illinois Farmer*, founded at Springfield by Simeon Francis who edited it through 1859. Matthias L. Dunlap succeeded him as editor in January, 1860, and for the next five years the paper was published in Springfield and edited on the Dunlap farm in Champaign county. It should also be noted that some, perhaps many, Illinois farmers took agricultural periodicals published outside of the state, notably such strong Eastern publications as the *Cultivator* (Albany), the *Genesee Farmer* (Rochester), and *Moore's Rural New Yorker* (Rochester), and Western farm journals like the *Valley Farmer* (St. Louis), the *Michigan Farmer* (Jackson), and the *Western Rural* (Detroit).

It is clear that the circulation of agricultural papers in Illinois

was not large at any time during the half century before 1870. The *Illinois Farmer* had a subscription list of ten thousand in 1860, and it is doubtful whether the *Prairie Farmer* ever exceeded twenty thousand before 1870. Farm periodicals certainly did not reach more than one farmer in ten; Norman J. Colman, editor of the *Valley Farmer,* and later Secretary of Agriculture, estimated in 1858 that in Illinois and neighboring states not more than one farmer in twenty took them. The deep-rooted prejudice against book farming, a disposition to suspect the motives of editors, and a fatuous belief that the richness of Illinois soil would cancel the effects of improper culture kept large numbers of farmers from subscribing. Moreover, some farmers could not spare a dollar or two for anything but necessities, and the argument of long-run profits had small appeal for little men struggling against droughts and unrewarding prices in evil days. Sometimes editors found farmers pointedly questioning the wisdom of swelling production through sounder culture, if the increase of the fields was not matched by a like return in the farmer's income. Progressive farmers, however, took a longer view, and leaders in the movement for better farming were seemingly unanimous in their endorsement of agricultural papers.

Because of the length of life and the influence of the *Prairie Farmer* and the *Illinois Farmer,* the analysis of the work of the farm press is based upon the files of these two publications, supplemented by two of the more important short-lived papers: *Emery's Journal of Agriculture* (Chicago, 1858) and Jeriah Bonham's *Rural Messenger* (Chicago, 1868-1872). The four periodicals, between them, accounted for the greater portion of the circulation of the state's farm papers and served as models for the lesser brethren of the household. The Illinois journals stressed the point that they were particularly adapted to the special conditions of the West, and though their chief interest was in actual farming practice, their range of subjects was gradually expanded until it comprehended nearly every phase of rural economy. Political and partisan matters were rigorously excluded from the columns.

It was in printing the contributions of practical farmers that the agricultural papers performed their most characteristic function. Editors reminded their readers again and again that the real purpose of a farm journal was to serve as a clearing house or pool of agricultural intelligence; the farm paper was the

agency through which farmers might appropriate for themselves the accumulated experience of the entire rural class. It was no small task to induce hard-bitten practical farmers of the 'fifties, conscious of their poverty in penmanship, orthography, and rhetoric, to sit down by whale, coal, or lard oil lamps after a long day in the fields, to scratch out a concise treatise on sod breaking, manuring, or the cure of glanders. But the response was gratifying, and a considerable fraction of the columns was filled with contributions from working farmers. The question and answer method was another effective technique for eliciting information, and the editors themselves furnished some of the material. Agricultural exchange periodicals were placed under heavy contribution, and agricultural books and printed transactions of societies were sometimes drawn upon.

Editors, looking about them, found farmers conservative to the point of obduracy, hostile to innovation, loath to abandon practices bequeathed by the ancients, contemptuous of farming by the book, and often enslaved by superstition. It was in such a climate that the agricultural reformers went forth to war. Old practices and theories whose bankruptcy was apparent to enlightened men were to be destroyed by ceaseless exposure, both in the editorial columns and in the communications of farmers who had weighed and found them wanting. The frontiers of agricultural knowledge were to be rolled back by bold experiment and wide publicity of its results. The whole business of farming, in short, needed a new foundation. It was to be grounded not upon ancient usage and blind imitation but upon understanding.

Nowhere was the farmers' adherence to archaic lore and their ignorance of the fundamentals of plant and animal life more strikingly exhibited than in the tenacity with which they clung to hoary superstitions. The "water witching" myth, still far from dispelled in the 1940's was incontrovertible truth for many farmers, and the prejudice against tilling prairie soil was another case in point. Still more preposterous were the very widespread belief in a strong influence of the moon upon agriculture, and the notion that grain crops were frequently transmuted into a degenerate species of grass called "cheat" or "chess." These myths enjoyed general credence all over America, and have never been wholly extirpated. The legends were damned as puerile voodoo-

ism by farm editors, but not with complete success, and, indeed, not always with conviction.

If farmers were so ignorant of the scientific principles underlying agriculture, editors of the farm papers saw the need for systematic instruction in the fundamentals of plant and animal physiology, animal breeding, vegetation, growth, and soil fertility. Such material was supplied in liberal quantity. It was occasionally extracted from books and published papers of scientific societies, sometimes presented as a leading article or essay from the pen of the editor or a special contributor, and sometimes a series of substantial articles was furnished by a competent authority.

Throughout the period the editors sought to impress upon farmers the concept that agriculture is a science; but like so many other agricultural reformers in pre-Civil War America, they frequently fell into the error of oversimplification. Too often the view was expressed that the science of agriculture was little more than a matter of agricultural chemistry and soil analysis. A farmer needed only a smattering of chemical lore, an analysis of a sample of the soil on his farm, and all other things would be added unto him. Liebig was hailed as the prophet of a new agricultural dispensation, and the farm papers took up the craze with spirit. Farmers were supplied with analytical data from which they were to determine the quantity and quality of elements needed in their fields. The enthusiasm for the panacea had, however, largely spent itself by 1850, and many of the agricultural periodicals of Illinois and the nation had by that time ceased urging it upon farmers as a magic touchstone.

Far more important and of more lasting value than the journals' flights into the ether of theory were their ceaseless campaigns to improve farming practice. True to their self-appointed task of adapting modes of culture to the peculiar conditions of the West, they concentrated their efforts upon what they called a "new agricultural system" and upon the special problems facing the prairie farmer. A great deal of space was devoted to the question of prairie breaking, especially before 1860, and throughout the period they preached, perhaps with more emphasis than it deserved, the wisdom of subsoiling and deep plowing. An enormous quantity of material on fencing was printed, with stress on hedge fencing before 1850 and on wire thereafter. In issue after issue the editors urged farmers to

stock Illinois with fine horses, cattle, sheep, and swine, to import highly bred strains, to apply the soundest principles of breeding and feeding, and to raise their animals with an eye to utility traits: maximum production of flesh, milk, and breeding and draft qualities.

Husbandmen were admonished to diversify their farming operations, to keep themselves shrewdly informed of market conditions, to keep farm account books, and to work moderately small farms, cultivating a few acres well rather than large farms in wasteful, slovenly fashion. Dairy and poultry production were advocated as relatively untrod avenues to prosperity, and, with more enthusiasm than wisdom, agriculturists were pressed to take up the culture of silk, sugar, sorghum, flax, hemp, wool, cotton, and tobacco. The fruit growing and bee keeping interests were also encouraged. Sometimes the editors over-reached themselves, but more often readers were cautioned against the agricultural crazes in which farmers threw themselves with fanatical zeal into the pursuit of some new will-o'-the-wisp. When farmers showed a disposition to make headlong rushes into untried realms, the journals called for caution and kept a wary eye open for humbugs.

The complacent belief, so characteristic of Illinois farmers, that the state's soil was inexhaustibly rich and fertile beyond improvement was denounced with vigor. The papers inveighed against the folly of permitting manures to rot in the barnyard or to be thrown away, and of taking crop after crop from the same soil without regard to rotation or restoring the overworked land. From their earliest days the periodicals emphasized the need for applying restoratives to the soil and installing proper systems of drainage. The cultivation of grasses, both native and exotic, and the planting of forest trees on the prairies were strongly encouraged.

Editors welcomed the appearance of one labor-saving device after another and kept their readers informed of the progress in the development of new and improved implements and machines. Farmers' attention was repeatedly drawn to the benefits to be derived from increasing mechanization. Detailed accounts of husking and shelling machines, mowers, reapers, and harvesters, plows of every sort, mole ditchers, corn planters, "weed annihilators," revolving horse rakes, stump pullers, wind

mills, and a host of other mechanical devices were published at frequent intervals.

Farmers were rebuked for their failure to provide adequate shelter for their machinery and livestock. Essays, letters, and pictures giving advice and instruction on the building of farm dwellings, barns, sheds, poultry and hog houses, and other lesser farm buildings appeared regularly. Special veterinary, entomological, horticultural, and mechanical columns provided a valuable service, and very often odd bits of space in the journals were filled with hints and suggestions, a short paragraph or a single sentence in length. Another useful device was the practice of printing a monthly column with the title "Work of the Month," or a similar designation, in which was outlined the farmer's program for the current month, with suggestions for the better performance of the tasks to be done.

The social and economic interests of the farm papers were scarcely less important than the columns of advice on agricultural practice. The influence of the farm press upon legislation is impossible to access, but there is reason to belive that it was not small. Throughout the period the journals lent their support to individuals, farmers' organizations, and pressure groups interested in the enactment of laws for the relief and improvement of agriculture. Indeed, the periodicals did not hesitate to enter the lists on their own account in efforts to wring from reluctant legislators a recognition of agriculture's needs and rights. They kept up a ceaseless agitation for laws ranging all the way from demands for state and federal departments of agriculture to calls for tariff protection for wool growers. They devoted liberal blocks of space to editorials asking the state to create the office of state geologist and a bureau of statistics, to appoint a state entomologist, to enact a poor man's fence law, to pass legislation to protect sheep from dogs and orchards from thieves, and to make grants in aid to state and county agricultural societies. Legislation to improve the common schools was energetically advocated, and when the Land Grant College movement was launched, the farm press added its weight to the pressure that was brought to bear upon Congress and the General Assembly. In the 'fifties the journals struck hard against land monopoly, and after 1863 they added railroad and warehouse regulation and river and canal improvement to their list of demands.

The cause of agricultural fairs, societies, farmers' clubs, and horticultural societies found a vigorous advocate and a stimulating critic in the farm press, as did also farmers' organizations of a purely economic nature. Not content with sniping at petty swindlers who victimized farmers, the journals trained their heavy guns upon the speculators and monopolists who plundered the producing class on a more magnificent scale. They had thrown themselves into the fight several years before the Patrons of Husbandry unfurled their battle flag.

But, though the Illinois farm press ceaselessly exposed exploiters of the rural class, it followed the policy, marked out by the oldest American agricultural periodicals, of printing paeans without number in praise of husbandry. The farmer's life was constantly held up as the noblest of vocations, and the farming class as the greatest of the children of men, while city life with its crowded tenements, frenzied markets, and preoccupation with gain, was denounced as sordid, unhealthful, and demoralizing. This thesis was steadily preached by the journals in poetry and prose, in fiction and sober discourse.

The editors deplored the fact that many Illinois farmers fixed their hopes for profits not upon their farming operations but upon speculative rises in land values. Too many farmers were willing to sell out and make a "deal" at the first opportunity, and the lure of the farther West exerted a greater pressure than some plowmen could withstand. The agricultural leaders and editors repeatedly admonished farmers to remain on their farms. A special effort was made to keep farmers' sons upon the land.

The toil and sheer loneliness that sometimes made farm life a burden would be immeasurably relieved, said writers for the farm papers, if farm people would make their home as attractive as possible, visit their neighbors frequently, and learn to play. Books, parlor games, simple amusements, and an intelligently conceived program of rural sports were advocated as means for providing relaxation for work-worn husbandmen, for adding warmth, cheer, and beauty to the lives of farm women, and for keeping young men in the country.

The journals themselves made some contribution to this program, especially after 1855, by devoting a large amount of space to fiction, poems, humor columns, and special departments for boys and girls. The "literary page" slanted heavily to melancholy, nostalgia, and romantic sentimentality—a fair which a

more cynical and sophisticated generation, not given to self-examination, finds it easy to deride because it does not understand the wistful aspirations and bewilderment of simple folk whose narrow, purposeless lives and starved emotions found solace in the opiate of fancy. Essays of a moral and religious nature and pleas for elevation of womankind appeared in most of the papers, and columns on health, hygiene, and sanitation were printed at intervals. Puzzle columns supplied rebuses, riddles, word puzzles, anagrams, and similar diversions for children and adults alike, and book reviews of agricultural and general literature performed a function of some cultural value. Weeklies like the *Prairie Farmer* and *Emery's Journal of Agriculture* printed columns of general news, drawing their material from the newspaper press.

Nearly every issue of the several farm papers contained a "household department" for women, providing recipes, information on gardening, instruction in home decoration, advice concerning clothing, diet, and the home treatment of injuries and illnesses, and a large variety of other topics that interested farm women. In somewhat the same vein, though less rigorously practical, were such women's departments as "The Tea Table" in the *Prairie Farmer* and the "Ladies Department" in the *Rural Messenger*. The columns, often conducted by women, contained a varied offering, ranging from advice on the raising of children and disquisitions on the joys of motherhood to pieces on fashions, parlor manners, and the perils of tight lacing.

It is difficult to escape the conclusion that the farm journals were the most influential of the several agencies for the instruction of farmers in the half century before 1870. The very regularity of their visits every week or every month into a farmer's home gave them an advantage far above those of state and local societies and fairs. The range of subjects they discussed, their democratic flavor, the close communion between editors and readers, the sense of class solidarity and pride which they inspired, and the high purpose of the agricultural leaders and plain farmers who wrote for them invested them with a capacity for catching the farmer's ear where books and sober treatises failed. In young and lusty Illinois they guided the state's farming practice during the awkward age and saw it through the revolution that transformed the rural economy from the pioneer, self-sustaining phase to the modern era of commercial agriculture.

Vita

Richard Bardolph was born on February 18, 1915, in Chicago and attended the Roseland School for Christian Instruction and the Chicago Christian High School. He was granted the degrees of Bachelor of Arts (1940) and Master of Arts (1941) by the University of Illinois. In the years 1941-1943 he was a Fellow in the Department of History in the same university and in the following year served as an assistant on the instructional staff. He is a member of Kappa Delta Pi, Phi Kappa Epsilon, and Phi Beta Kappa.